

a sensor mounted to one or both of the movable member and the stationary member, said sensor being responsive to a supply voltage signal and providing a sensor voltage signal indicative of the position of the movable member relative to the stationary member; and

B' a voltage to current converter responsive to the sensor voltage signal, said voltage to current converter converting the sensor voltage signal to a representative current signal to provide an indication of the position of the movable member.

Claim 10. (New) The device according to claim 9 wherein the voltage to current converter includes a comparator responsive to the sensor voltage signal and a feedback voltage signal, said comparator outputting a comparator voltage signal if the sensor voltage signal is greater than the feedback voltage signal.

Claim 11. (New) The device according to claim 10 wherein the voltage to current converter further includes an emitter follower bipolar transistor and a resistor coupled to an emitter terminal of the transistor, said current signal being provided at a collector terminal of the transistor, wherein a base terminal of the transistor is responsive to the comparator voltage signal and the feedback voltage signal is provided at the emitter terminal of the transistor, and wherein the feedback voltage signal increases as the comparator voltage signal increases so that the difference between the sensor voltage signal and the feedback voltage signal is reduced.

B' Claim 12. (New) The device according to claim 9 further comprising a voltage detection circuit for detecting the supply voltage signal, said voltage detection circuit including a voltage detector and a switch, said voltage detector determining whether the supply voltage signal rises above a first predetermined voltage and falls below a second predetermined voltage, said voltage detector causing the switch to turn off the supply voltage signal to the sensor if the supply voltage signal rises above the first predetermined voltage and causes the supply voltage signal to be applied to the sensor if the supply voltage signal falls below the second predetermined voltage.

Claim 13. (New) The device according to claim 12 wherein the switch is a bipolar transistor, wherein the detector is coupled to a base terminal of the bipolar transistor, and wherein the supply voltage signal is transferred to an emitter terminal of the bipolar transistor if the supply voltage signal is below the first predetermined voltage.

Claim 14. (New) The device according to claim 9 wherein the sensor is a Hall Effect sensor.

Claim 15. (New) The device according to claim 9 wherein the movable member is a vehicle mirror and the stationary member is a mirror housing.

Claim 16. (New) The device according to claim 9 wherein an output voltage of the device is a ratio of the supply voltage signal and a reference voltage signal.

Claim 17. (New) A position sensing and control device for sensing and controlling the position of a vehicle mirror with respect to a mirror housing, said device comprising:

a source of a supply voltage signal;

B¹ a voltage detection circuit responsive to the supply voltage signal, said voltage detection circuit turning off the supply voltage signal if the supply voltage signal is above a first predetermined voltage and turning the supply voltage signal back on if the supply voltage signal falls below a second predetermined voltage;

a sensor mounted to the mirror, said sensor being responsive to the supply voltage signal from the detection circuit and providing a sensor voltage signal indicative of the position of the mirror relative to the mirror housing; and

a voltage to current converter responsive to the sensor voltage signal, said voltage to current converter converting the sensor voltage signal to a representative current signal to provide an indication of the position of the mirror, said voltage to current converter including a comparator responsive to the sensor voltage signal and a feedback voltage signal, said comparator outputting a comparator voltage signal if the sensor voltage signal is greater than the feedback voltage signal.

Claim 18. (New) The device according to claim 17 wherein the voltage to current converter further includes an emitter follower bipolar transistor and a resistor electrically coupled to an emitter terminal of the transistor, wherein a base terminal of the transistor is responsive to the comparator voltage signal and the feedback voltage signal is provided at the emitter terminal of the bipolar transistor, and wherein the feedback voltage signal increases as the comparator voltage signal increases so that the difference between the

sensor voltage signal and the comparator voltage signal is reduced, said current signal being provided at a collector terminal of the transistor.

B' Claim 19. (New) The device according to claim 17 wherein the voltage detection circuit includes a voltage detector and a switch, said voltage detector determining whether the supply voltage signal is above the first predetermined voltage and below the second predetermined voltage, said voltage detector causing the switch to turn off the voltage supply signal to the sensor if the supply voltage signal rises above the first predetermined voltage and causes the supply voltage signal to be applied to the sensor if the supply voltage signal falls below the second predetermined voltage.

Claim 20. (New) The device according to claim 19 wherein the switch is a bipolar transistor, wherein the supply voltage signal from the detector is coupled to a base terminal of the bipolar transistor, and wherein the supply voltage signal is transferred to an emitter terminal of the bipolar transistor if the supply voltage signal is below the first predetermined voltage.
